Better Buildings Residential Network Peer Exchange Call Series:

REOPENING: How Is It Happening and What Does It Mean for Residential Energy Efficiency?

September 10, 2020

Agenda and Ground Rules

- Agenda Review and Ground Rules
- Opening Poll
- Residential Network Overview and Upcoming Call Schedule
- Featured Speakers:
  - **Jonathan Waterworth**, AZ Energy Efficient Home
  - **Alysse Rodrigues**, United Illuminating
  - **Kent Tomlinson**, Southwest Electric Power Company (SWEPCO)
- Open Discussion
- Closing Poll and Announcements

Ground Rules:

1. **Sales of services and commercial messages are not appropriate** during Peer Exchange Calls.
2. Calls are a safe place for discussion; **please do not attribute information to individuals** on the call.

The views expressed by speakers are their own, and do not reflect those of the Dept. of Energy.

Better Buildings Residential Network

Join the Network

Member Benefits:

- Recognition in media and publications
- Speaking opportunities
- Updates on latest trends
- Voluntary member initiatives
- One-on-One brainstorming conversations

Commitment:

- Members only need to provide *one number*: their organization's number of residential energy upgrades per year, or equivalent.

Upcoming Calls (2nd & 4th Thursdays):

- Sep 24: DATA SPIKE: Benchmarking and Reporting Energy Efficiency in a Pandemic
- Oct 08: TRANSFORMATION: Technology that Can Change the Residential Energy Efficiency World

Peer Exchange Call summaries are posted on the Better Buildings website a few weeks after the call

For more information or to join, for no cost, email bbresidentialnetwork@ee.doe.gov, or go to energy.gov/eere/bbrn & click Join

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Jonathan Waterworth

AZ Energy Efficient Home

U.S. DEPARTMENT OF ENERGY

“Reopening” Home Performance!

“Reopening” Home Performance!

How is it happening and what it means for Residential Energy Efficiency.

There has never been a time where people have spent as much time in their homes as we have this year. I feel it’s safe to say that most people are realizing for the first time that their home could be more efficient, comfortable and some have a new focus on improving their Indoor Air Quality.

This is an exciting time as we now have a determined and informed consumer looking to Home Performance to step in and save the day!

The Home Performance Contractor is the “Ultimate” contractor and is best suited for these tasks.

“Reopening” Home Performance!

First, it is extremely important to identify and understand what the consumer desires and how to execute it.

- Home office warm and stuffy.
- Air Conditioner runs all day.
- High Utility costs.
- Desire a healthier home.

These are a few common concerns for the consumer contacting a HP contractor. Really, it’s not much different than any other year but now they have experienced the issues firsthand and are motivated to make improvements.

“Reopening” Home Performance!

Home office is “warm”. This is to be treated just like any other room you dealt with but now it’s a priority.

- ✓ Room pressure.
- ✓ Airflow/Design.
- ✓ Duct leakage.
- ✓ Performing R-value / Air Barrier.

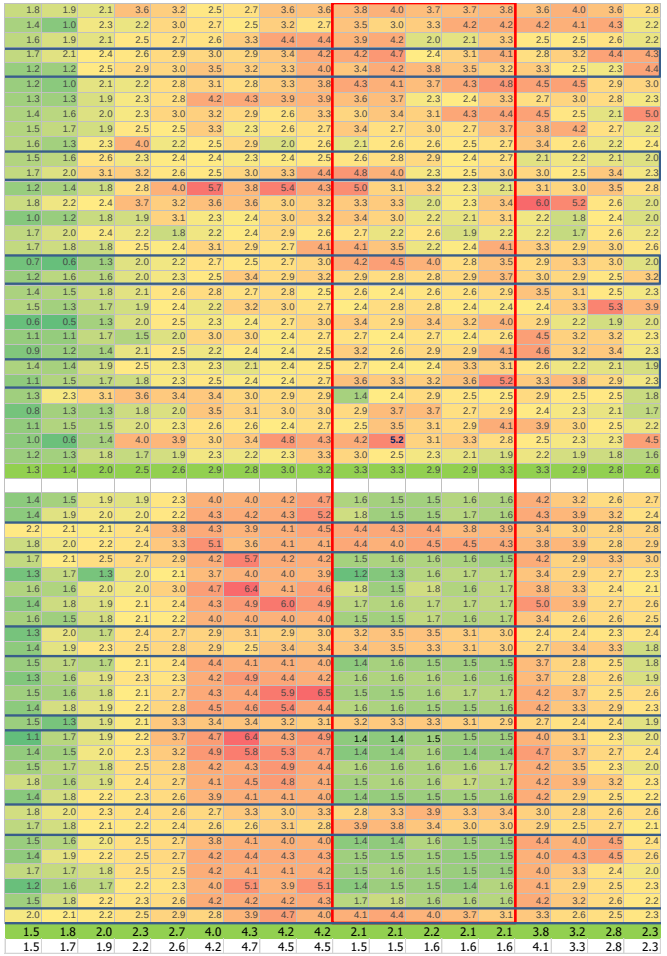
“Air Conditioner runs all day”. Identify the demand on the cooling and why it can’t maintain comfort efficiently.

- ✓ Performing R-value / Air Barrier.
- ✓ Duct leakage.
- ✓ Envelope Leakage.
- ✓ AC needs service/tune up.
- ✓ Behavioral changes creating more load? Clothes dryer?

“Reopening” Home Performance!

- “High Utility Cost”. Typically addressing the Mechanical and Envelope is sufficient to achieve the desired outcome for these concern’s but now there’s additional savings potential by “Load shifting”.

- We have always been reducing the Kwh which is important and provides positive peripheral impacts on residents but now we need to look at when they use their energy.



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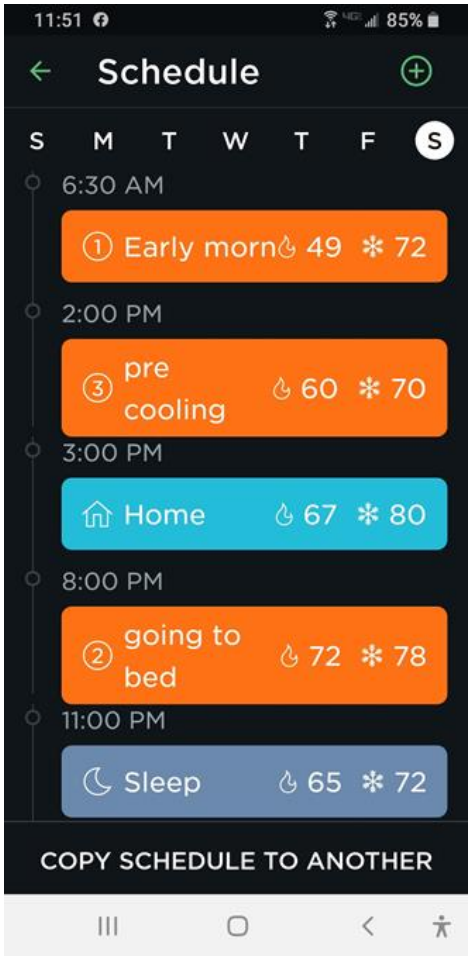
“Reopening” Home Performance!

- Air Conditioning has the single highest demand, so it is imperative to have the ability to optimize when and how to run it.
- Arizona has both TOU and Demand rate plans, so smart thermostats are an important tool to load shift to a pre-cooling or maintenance cooling strategy which allows the consumer to maintain comfort while saving money and not having to think about adjusting set temperature.
- We find that a typical house internal temp. increases 4 degrees per hour when AC is off and over 100 degrees outside compared to a retrofitted home which drifts 2 degrees per hour.



“Reopening” Home Performance!

- As you know electric water heaters are a huge consumer of electricity, so we want to shift them to only operate during off peak by using a timer preferably a Wi-Fi connected timer.

- Here we installed a mixing valve which allows us to turn up the temperature and drift across the on peak and not run out of hot water. In fact we set these to run for 1.5 hrs. twice a day off peak and had no complaints.

- These are examples of how to save on consumer cost while not having to sacrifice comfort.

“Reopening” Home Performance!

- With our current environment there has been an increase of curiosity and interest in improved Indoor Air Quality.
- Unfortunately, I have witnessed ads for this and offerings by people that aren’t best suited to achieve such importance.
- I will only say that I strongly believe in getting control of mechanical & envelope first, Identify any potential “triggers or hazards” and perform a properly balanced mechanical ventilation preferably with Hepa filtration. This has provided us with great success for our clients.

“Reopening” Home Performance!

- The HP contractor can single handedly deliver more to the consumer than anyone.

- There is opportunity to grow your business and outperform others while providing your customer with exactly what they desire.

“Reopening” Home Performance!

AZ ENERGY Efficient Home

Contact us at (480) 471-0111 or
office@azenergyefficienthome.com

ENERGY STAR AWARD 2020
CONTRACTOR OF THE YEAR
Sustained Excellence

Alysse Rodrigues
United Illuminating

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Empowering you to make smart energy choices

COVID-19 Program Impacts: Home Energy Solutions, Home Energy Solutions-Income Eligible, and Multifamily Initiative

September 11, 2020

EVERSOURCE

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Introduction – Alysse Rodrigues

- 5 years working in Energy Efficiency industry
- Assists with Home Energy Solutions Residential Program
- Experience in Non-Profit, Small Business, and now utility programs.
- Energy Efficiency Certifications:
  - BPI Envelope Professional

Energy Efficiency Programs

- **Residential**
  - Home Energy Solutions℠ and Home Energy Solutions-Income Eligible
  - Multifamily Initiative
  - Heating, Cooling and Water Heating
  - Retail Products (Lighting/Appliances)
  - New Construction
- **Small Business**
- **Commercial and Industrial**
  - Heating, Cooling, and Ventilation (HVAC): Boilers, Roof Top Units, Heat Recovery Units, etc.
  - LED Lighting: Interior and Exterior.
  - Energy Efficient Equipment: Air Compressors, Dust Collectors, Injection Molding Machines, etc.

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Home Energy Solutions (HES) and Home Energy Solutions – Income Eligible (HES-IE)

- Virtual Pre-Assessment
  - Education
  - Self Install Measures
- In-home, direct installation weatherization program designed to help customers save energy and money while making their homes more comfortable.
  - 1-4 family homes
- HES “core services” offered to customers at no cost.
  - HES used to cost $75 - $174
- HES-IE “core services” offered to customers at no cost.
  - Custom incentives for add-on measures at little to no cost.
- Services valued at about $1,000
- Estimated Annual Savings of $200

HES and HES-IE Core Services

- Each visit provides a comprehensive energy assessment.
- Blower door guided air sealing
- HVAC Testing
- Duct Sealing (If Applicable)
- LED lighting upgrades
- Water saving measures
- DOE Home Energy Score (HES Only)

Insulation Rebate – 1 to 4 Family Homes

- $2.20 sq. ft. for all areas
  - Working on updating to $2.30/sq. ft. for HES-IE through June 2021
  - Walls, attic floors, basement and garage ceilings
- Self-installs .25 sq. ft.
- Capped at 100% of total cost up to $10,000 *whichever is less*
- Anyone who has HES in 2020
  - Need to complete insulation by March 31 2021
- Anyone who had HES in the last 36 months is eligible
  - Need to complete insulation install between May 16, 2020 and December 31, 2020

2020 Window Incentive - 1 to 4 Family Homes

- Double Pane Window
  - Need HES
  - ENERGY STAR® window with U-Value of .27 or less
  - Can **only** replace **single pane windows without storms** within the building Envelope
  - $50/window
- Triple Pane Window
  - Do not need HES
  - ENERGY STAR® window with U-Value of .20 or less
  - Can replace any type of window within the Building Envelope
  - $100/window
  - Limited time offer, Must be installed by December 31, 2020

2020 Air Source Heat Pumps 1 to 4 Family Homes

- AHRI ENERGY STAR® Certified Ducted Air Source Heat Pump
  - $500/ton
  - Maximum of 2 units
  - Online or mail-in rebate

- AHRI ENERGY STAR® Certified Ductless Air Source Heat Pump
  - $500/ton
  - Maximum of 2 units
  - Instant Discount

- Customers who go through HES and have electric Heat receive an additional $1,000/ton for Ducted or Ductless Air Source Heat Pumps
  - Maximum of 2 units

2020 Air Source Heat Pump Pilot 1 to 4 Family Homes

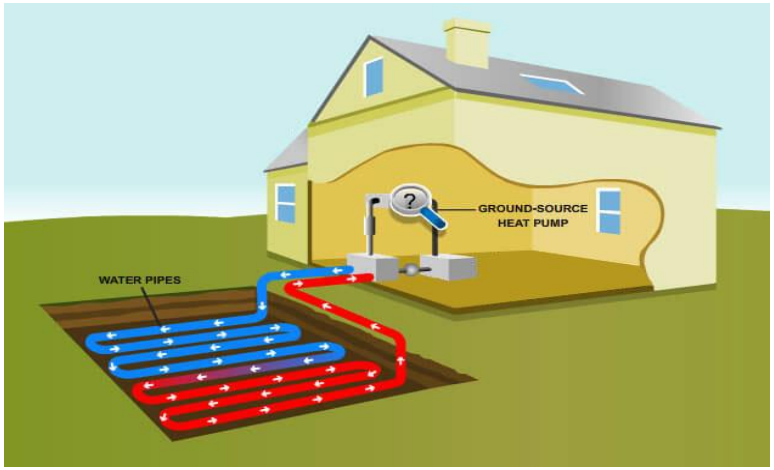
Air Source Heat Pump Fuel Optimization Pilot	HES Pilot Rebate	2020 Mail-in or Instant Discount	Total Incentive
Ducted Heat Pump	$1,000/ton	$500/ton	$1,500/ton
Ductless Heat Pump	$1,000/ton	$500/ton	$1,500/ton
Integrated Control for Existing Unit	$500/unit	N/A	$500/unit, maximum $1,500/home
Customer rebate for 1 year of operation data after installation date	$50	N/A	$50/home

- Displace Oil/Propane Heating
- All existing incentives/rebates will be available through instant discount/upstream if not participating in the pilot
- Integrated Controls
- Maximum 2 units
- AHRI ENERGY STAR® Rated system

2020 Geothermal Heat Pump Rebate – 1- 4 Family Homes

- Geothermal Heat pump
  - **$750**/ ton, maximum $10,000

- Geothermal Heat pump (oil/propane heated homes)
  - **$1,500**/ ton, maximum $10,000
  - Limited time incentive



Multifamily Initiative - 5+ Units

Limited Time Increased Incentives for Project Completed by 11/15/20

	Market Rate	Income Eligible	PROJECT QUALIFICATION
Comprehensive Project Incentives	Up to 75% of Project Cost	Up to 100% of Project Cost	• Comprehensive project must have two or more measures from different end uses (ie. lighting, heating, cooling, appliances, DHW). • All measures within a Letter of Agreement must be installed before comprehensive incentive can be paid. • No one end use can exceed 85% of the project's value based on annual savings • Amount of incentives per project is predicated on the energy savings generated across measures.
Single End Use	Up to 60% of Measure Cost	Up to 95% of Measure Cost	• Project must impact at least one End Use
Direct Install Dwelling Unit Measures	Up to 100% of Installed Cost	Up to 100% of Installed Cost	• Measures include: air sealing, duct sealing, LED bulbs and DHW savings • Contractor must meet all credentials as listed in the 2020 Multifamily Initiative Process Guide

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Financing - 1 – 4 Family Homes

- Minimum amount reduced from $1,000 to $500
- Customers were able to defer energy efficiency loan payments for up to 3 months
- When qualifying customers for loans did not take into account late payments from March 2020 – end of year

Program Description	Administered by	Rates & Terms	Loan Amounts	Repayment Options	Get Started
HES Payment Plan (Micro) Loan: for "Type 1" qualifying improvements	Capital for Change Inc.	0% 3 year repayment	$500 – $3,000	On electric utility bill	www.capitalforchange.org
Smart-E Loan: for heating/cooling, insulation, windows, solar and more	CT Green Bank	4.49% – 6.99% 5 – 12 year repayment options	$500 – $40,000	Paid through local lenders*	EnergizeCT.com/smarte
Energize CT Heating Loan: for heating system replacements**	Capital for Change Inc.	0.99% 3-10 year repayment	Up to $15,000	On electric utility bill	www.ctheatloan.com
Landlord Loan	Capital for Change Inc.	4.49% to 6.99% 5 - 12 year repayment options	$3,000 - $40,000	Paid through local lenders*	www.capitalforchange.org

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Vendor Admin Fees & PPE Invoicing

- Paid vendors an admin fee payment based on their weekly average number of completed & invoiced projects completed from January – February 2020
  - Vendors received a minimum of $500/week if amount per project was below
  - Vendors invoiced for 8 weeks total from 3/18/2020 – 5/13/2020

- Additional cost associated with the increased levels of Personal Protective Equipment (“PPE”) associated with the health and safety guidelines for customer contact

- Compensation started on 6/11/2020

- $125/project was a fair amount to increase each core service visit for PPE (in-home projects only)

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Kent Tomlinson
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"REOPENING: How Is It Happening and What Does It Mean for Residential Energy Efficiency?"

Southwestern Electric Power Company's COVID-Shuffle Year-to-Date

AEP SOUTHWESTERN ELECTRIC POWER COMPANY℠
A unit of American Electric Power

When Plans Go Awry……

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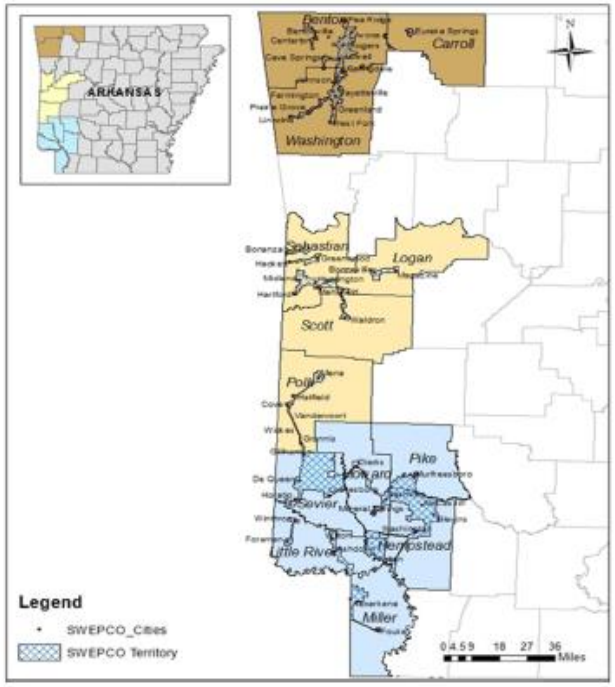
Challenges

- Obvious scheduling issues with customers.
- Approximately 15% cancellations.
- Contractor crew members have had to quarantine and one member contracted the virus – ALL non-work related.
- Some crews have failed to stick to their proven work models due to the uncertainty of this 'new normal.'
- One crew is still shut down.
- Territory – 6+ hours.

SWEPCO's Arkansas Service Territory

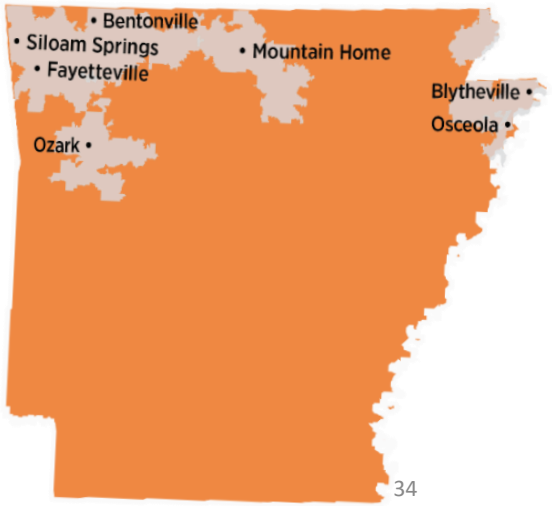
Serves 119,000 customers in parts of 13 counties in western Arkansas

Non-contiguous & interspersed with electric co-ops & municipal utilities that do not provide energy efficiency programs



Black Hills Energy

- 169,300 customers
- 104 communities served
- 391 employees
- 6,499 miles of gas system infrastructure




Improvise.
Adapt.
Overcome.

AEP SOUTHWESTERN ELECTRIC POWER COMPANY
A unit of American Electric Power

Sharpening the Saw

- CDC guidelines/practices implemented for contractor's/customers.
- Bi-weekly and or monthly contractor calls.
- Launched CLEAResult's Virtual Assessment Tool.
- Contractor Scorecard used to evaluate success and needs for improvement.
- Online contractor trainings.
- Joint Projects with Black Hills Energy – 414 or 37% of all projects YTD! One contractor = one visit for both utilities, eliminating multiple visits to customers' homes.
- Two fall marketing campaigns to push Home Performance.
- On track to achieve @ 75-80% of goal.

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Contractor's Scorecard

YTD	A	B	C	D	E	F	Average/Totals
Allotted Homes	545	204	176	115	141	216	1,397
Completed Homes	486	236	56	32	63	129	1002
% Complete	89%	116%	32%	28%	45%	60%	
Joint Projects	203	146	17	0	48	0	414
Joint Project Average	42%	62%	30%	0%	76%	0%	37.8%
Average kWh/House	3,900.08	1,546.58	1,806.60	1,187.30	2,432.87	4,484.09	3,443.39
Average kW/House	1.23	0.77	0.98	0.49	0.89	1.16	1.17
Average $/House	$852.54	$652.10	$895.34	$711.30	$530.53	$910.18	$903.78
$/kWh	$0.22	$0.42	$0.50	$0.60	$0.22	$0.20	$0.26
Avg. Duct Reduction	319.11	254.03	238.34	147.29	267.02	358.64	296.12
Avg. Air Reduction	1,436.06	1,190.56	788.59	1,179.50	1,269.73	1,874.85	1,401.64
Avg. LED/Home	9.24	8.59	13.64	10.78	8.14	11.82	10.48
Avg. APS/House	0.63		0.48	0.31	0.33		0.55
Avg. # of Ducts/House	80%	58%	63%	44%	86%	59%	77%
% Homes Insulated	31%	39%	46%	28%	14%	15%	35%
% of Homes Air Sealed	79%	56%	52%	38%	76%	75%	76%
Avg. # of Measures/House	4.56	3.70	4.43	3.91	4.00	4.40	4.72
Average Tonnage	3.06	2.92	2.94	2.71	3.10	3.18	3.02
Paperwork Flow Days	11.4	6.2	4.9	23.7	4.8	9.2	11.0

Where We Stand……

	Program Goals	YTD 2020 Amount	2020%
# of Homes	1,925	1,002	52.1%
Energy Savings (kWh)	6,729,263	3,223,012	47.9%
Energy Savings (kW)	2,272	1,097	48.3%
Incentive Budget ($)	$2,092,125	$845,938	40.4%


GIDDY UP!

Thank you!

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New Virtual Sessions from Solar Decathlon on Innovative Homes and Energy Careers

The Solar Decathlon announced a new webinar series starting in September that will include virtual tours of innovatively designed homes and address a variety of topics from the rise in zero energy homes to clean energy careers.

Offered at no cost, these webinars will be available to the general public and target current and prospective homeowners, as well as educators, students, young professionals, members of the real estate industry, educators, home builders and renovation contractors, and others interested in learning about state-of-the-art home design and construction.

View and register for the webinars in this series.

New Virtual Sessions from Solar Decathlon on Innovative Homes and Energy Careers

- **Solar 101 – How Solar Energy Works**
  Wednesday, September 16, 2020, 1–2 p.m. E.T.
  Learn more about this webinar and register here
- **Discovering Clean Energy Careers**
  Wednesday, October 14, 2020, 1–2 p.m. E.T.
  Learn more about this webinar and register here
- **A Virtual Hands-On Energy Workshop for Families**
  Wednesday, November 18, 2020, 1–2 p.m. E.T.
  Learn more about this webinar and register here
- **Solar Student Leaders of Tomorrow Showcase**
  Wednesday, December 16, 2020, 1–2 p.m. E.T.
  Learn more about this webinar and register here
- **Resilient Home 411: Strategies to Weather and Recover from Natural Disasters**
  Wednesday, January 20, 2021, 1–2 p.m. E.T.
  Learn more about this webinar and register here
- **Zero Energy Ready Homes: New and Growing Fast**
  Wednesday, February 17, 2021, 1–2 p.m. E.T.
  Learn more about this webinar and register here
- **The Future of Solar: A Tour of Cutting-Edge Solar Research with the U.S. Department of Energy**
  Wednesday, March 17, 2021, 1–2 p.m. E.T.
  Learn more about this webinar and register here
- **Solar Decathlon Build Challenge Team House Tour**
  Friday, April 16, 2021, 1–2 p.m. E.T.
  Learn more about this webinar and register here
- **Winning Solar Home - The DOE Solar Decathlon Build Challenge Winners**
  Wednesday, May 19, 2021, 1-2 p.m. E.T.
  Learn more about this webinar and register here

Explore the Residential Program Solution Center

Resources to help improve your program and reach energy efficiency targets:

- Handbooks - explain *why* and *how* to implement specific stages of a program.
- Quick Answers - provide answers and resources for common questions.
- Proven Practices posts - include lessons learned, examples, and helpful tips from successful programs.
- Technology Solutions NEW! - present resources on advanced technologies, **HVAC** & **Heat Pump Water Heaters**, including installation guidance, marketing strategies, & potential savings.

https://rpsc.energy.gov

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Please send any follow-up questions or future call topic ideas to:
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